

What is claimed is:

1. A liquid crystal device comprising:

5 M (M is an integer equal to or greater than 2) rows
of scanning lines, and N (N is an integer equal to or
greater than 2) columns of data lines;

M X N number of switching element respectively
connected to one of the M rows of scanning lines and one of
the N columns of data lines;

10 M X N number of pixel electrodes respectively
connected to one of the M X N number of switching element;

M rows of opposite electrodes arranged oppositely to
respective rows of the M X N number of pixel electrodes
through a liquid crystal layer;

15 scanning line driving circuit which supplies a
scanning signal including a scanning period for selecting
at least one of the M rows of scanning lines to the M rows
of scanning lines;

20 data line driving circuit which supplies a data
signal to the N columns of data lines, and

polarity inverting circuit which inverts a polarity
of a voltage applied to the liquid crystal layer by
changing a voltage supplied to an opposite electrode of a

row corresponding to the selected scanning line in
synchronization with the scanning period.

2. The liquid crystal device according to claim 1,
wherein the polarity inverting circuit inverts a
voltage supplied to the opposite electrodes for the
respective rows in synchronization with a beginning of the
scanning period.

3. The liquid crystal device according to claim 1,
wherein the polarity inverting circuit comprises:
a memory section which holds a first electric
potential or a second electric potential as an electric
potential for each of the M rows of opposite electrodes,
and updates the held electric potential every scanning
period; and

an electric potential selecting circuit for selecting
the electric potential supplied to the M rows of opposite
electrodes based on the first electric potential or the
second electric potential outputted from the memory section
every scanning period.

4. The liquid crystal device according to claim 3,
wherein the memory section is a shift register which

sequentially shifts an input signal of the first electric potential or the second electric potential.

5. The liquid crystal device according to claim 4,
5 wherein the scanning line driving circuit sequentially switches a scanning line selected in synchronization with a clock signal, and

wherein the shift register sequentially shifts the input signal in synchronization with the clock signal.

10 6. The liquid crystal device according to claim 1,
wherein the polarity inverting circuit inverts a polarity of a voltage applied to the liquid crystal layer every one frame.

15 7. The liquid crystal device according to claim 1,
wherein the polarity inverting circuit inverts a polarity of a voltage applied to the liquid crystal layer for each one of the M rows of scanning lines.

20 8. The liquid crystal device according to any one of claims 1 to 7,

wherein the M rows of opposite electrodes are formed by M number of rectangular electrodes formed along each of

the M rows of scanning lines, and the M number of rectangular electrodes are insulated from each other.

5 9. Electronic equipment comprising a liquid crystal device according to any one of claims 1 to 8.

10. A driving device for a liquid crystal display panel comprising:

10 M rows of scanning lines, and N columns of data lines;

M X N number of switching element respectively connected to one of the M rows of scanning lines and one of the N columns of data lines;

15 M X N number of pixel electrodes respectively connected to one of the M X N number of switching element;

M rows of opposite electrodes arranged oppositely to respective rows of the M X N number of pixel electrodes through a liquid crystal layer;

20 scanning line driving circuit which supplies a scanning signal including a scanning period for selecting at least one of the M rows of scanning lines to the M rows of scanning lines; and

polarity inverting circuit which inverts a polarity

SUB
AD

of a voltage applied to the liquid crystal layer by changing a voltage supplied to an opposite electrode of a row corresponding to the selected scanning line in synchronization with the scanning period.

5

11. The driving device according to claim 10,
wherein the polarity inverting circuit inverts a voltage supplied to the opposite electrodes for the respective rows in synchronization with a beginning of the scanning period.

10

12. The driving device according to claim 10,
wherein the polarity inverting circuit comprises:
a memory section which holds a first electric potential or a second electric potential as an electric potential for each of the M rows of opposite electrodes, and updates the held electric potential every scanning period; and

15

an electric potential selecting circuit for selecting
the electric potential supplied to the M rows of opposite electrodes based on the first electric potential or the second electric potential outputted from the memory section every scanning period.

20

13. The driving device according to claim 12,

wherein the memory section is a shift register which sequentially shifts an input signal of the first electric potential or the second electric potential.

5

14. The driving device according to claim 13,

wherein the scanning line driving circuit sequentially switches a scanning line selected in synchronization with a clock signal, and

10

wherein the shift register sequentially shifts the input signal in synchronization with the clock signal.

15. The driving device according to claim 10,

15

wherein the polarity inverting circuit inverts a polarity of a voltage applied to the liquid crystal layer every one frame.

16. The driving device according to claim 10,

20

wherein the polarity inverting circuit inverts a polarity of a voltage applied to the liquid crystal layer for each of the M rows of scanning lines.

17. A substrate opposite to an active matrix substrate with a liquid crystal layer there between,

00818263.071601

SUB
A3

wherein the substrate comprises:

M rows of scanning lines, and N columns of data lines;

M X N number of switching element respectively
5 connected to one of the M rows of scanning lines and one of the N columns of data lines; and

M X N number of pixel electrodes respectively
connected to one of the M X N number of switching element,

wherein the substrate includes M rows of opposite
10 electrodes arranged oppositely to respective rows of the M X N number of pixel electrodes, in a rectangular shape, the M rows of opposite electrodes being insulated from each other.

15 18. A driving method comprising:

a step of supplying a scanning signal including a
scanning period in which at least one of a plurality of
scanning lines is selected, to the plurality of scanning
lines by scanning line driving circuit; and

20 a step of supplying a data signal to a plurality of pixel electrodes by data line driving circuit through N columns of data lines and a plurality of switching elements connected to the at least one selected scanning line; and

by polarity inversion driving circuit, a step of
inverting a polarity of a voltage applied to the liquid
crystal layer, which is formed between the pixel electrodes
and the opposite electrode, by changing a voltage supplied
5 to an opposite electrode of a row corresponding to the
selected scanning line in synchronization with the scanning
period.

Sub
B1

09818263.071601